



NRO-281-10

# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

### NORTHERN REGIONAL OFFICE

Douglas W. Domenech  
Secretary of Natural Resources

13901 Crown Court, Woodbridge, Virginia 22193-1453  
(703) 583-3800 Fax (703) 583-3821  
www.deq.virginia.gov

David K. Paylor  
Director

Thomas A. Faha  
Regional Director

October 1, 2010

### COMMONWEALTH OF VIRGINIA Department of Environmental Quality Northern Regional Office

#### STATEMENT OF LEGAL AND FACTUAL BASIS

Virginia Electric and Power Company  
Dominion Ladysmith Combustion Turbine Station  
Caroline County, Virginia  
Permit No. NRO - 40960

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Virginia Electric and Power Company has applied for a Title V Operating Permit for its Dominion Ladysmith Combustion Turbine Station located in Caroline County. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact: Gary Beeson Date: 9/27/2010  
Gary Beeson (703) 583-3969

Air Permit Manager: Terry H. Darton Date: 09/28/10  
Terry H. Darton

Regional Director: Thomas A. Faha Date: 9-30-10  
Thomas A. Faha

Event	Date	Initials
Code PS08	10/5/10	HGB
Scanned		
QC		

## **FACILITY INFORMATION**

### **Permittee**

Virginia Electric and Power Company  
5000 Dominion Boulevard  
Glen Allen, VA 23060

### **Facility**

Dominion - Ladysmith Combustion Turbine Station  
8063 Cedon Road  
Woodford, Virginia 22580

**County-Plant Identification Number:** 51-033-0040

## **SOURCE DESCRIPTION**

NAICS Code: 221112 - Fossil Fuel Electric Power Generation

The Dominion Ladysmith Combustion Turbine Station is considered a Title V major source because of its potential emissions of NO<sub>x</sub>, PM, and CO. The facility is located in an area that is classified as an attainment area for all pollutants and is a synthetic minor source under the Prevention of Significant Deterioration (PSD) regulations (9 VAC 5-80 Article 8). In addition to the current NSR permit the facility has an Acid Rain permit issued May 09, 2001 which will be included in the Article 3 Title V permit.

Dominion's Ladysmith Combustion Turbine Station is a peaking electric power generation facility. It consists of five (5) General Electric Model PG7241 (FA) simple cycle combustion turbines (Unit 1, Unit 2, Unit 3, Unit 4, and Unit 5). For each combustion turbine (CT), natural gas is the primary fuel with No. 2 distillate fuel oil as the backup fuel. The maximum rated heat input capacity for each CT when firing natural gas is 1,766 MMBtu/hour and 1,917 MMBtu/hour when firing No. 2 distillate fuel oil. The facility also includes two 2,700,000 gallon storage tanks for No. 2 distillate fuel oil and two permitted natural gas pipeline heaters, PH-3 and PH-4 (which replaced pipeline heaters PH-1 and PH-2) rated at 10.75 and 4.2 MMBtu/hour respectively.

The facility was issued a minor New Source Review (mNSR) permit to construct and operate on July 31, 2000 for five units, as identified above. Only two units (Unit 1 and Unit 2) were constructed under that permit. Unit 1 and Unit 2, which were constructed under the July 31, 2000 permit, are subject to the requirements of 40 CFR 60, Subpart GG. Two additional units (Unit 3 and Unit 4) were constructed under a July 6, 2007 mNSR permit which superseded the July 31, 2000 permit. The last unit (Unit 5) was permitted under a mNSR permit issued on July 1, 2008 which then superseded the July 6, 2007 permit. Since Unit 3, Unit 4, and Unit 5 were constructed after February 15, 2005 these units are subject to the requirements of 40 CFR 60, Subpart KKKK.

The initial Acid Rain Permit was approved on May 9, 2001 with an effective date of January 1, 2001. The NO<sub>x</sub> Trading Program was applicable to the facility on May 31, 2004 and then replaced by the Clean Air Interstate Rule (CAIR) therefore the NO<sub>x</sub> Trading Program is no longer applicable. On December 23, 2008 the U.S. Court of Appeals remanded CAIR to EPA. This action kept CAIR in force, but required EPA to develop a replacement rule which addressed the courts order. The CAIR application was received on June 20, 2007 and revised on February 28, 2008. The requirements of the Acid Rain Program and CAIR Program are incorporated into the federal operating permit.

The facility has also applied for alternate-operating scenarios for re-tuning of the CT's and fuel type transfers. These alternate-operating scenarios were approved and will apply while firing on both pipeline natural gas and on No. 2 distillate fuel oil.

Additionally, the facility applied for a custom fuel monitoring schedule for Unit 1 and Unit 2 in a letter to the Environmental Protection Agency (EPA), Region III dated December 3, 2002. EPA approved the custom fuel monitoring schedule for Unit 1 and Unit 2 in a letter dated December 17, 2002 and is attached as a part of this permit in Appendix A. Changes in the 40 CFR 60, Subpart GG with respect to fuel certification (matching those of Subpart KKKK) allow the submittal of the gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less will be used rather than the procedures outlined in the custom fuel monitoring schedule. The custom fuel monitoring schedule will remain in this permit, as an approved method should the facility request to again use this method.

## **COMPLIANCE STATUS**

A full compliance evaluation of this facility, including a site visit, was last conducted on July 29, 2009. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility was not found to be in violation of any state or federal applicable requirements at this time.

### EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>1,4</sup> (P) Primary Fuel (S) Secondary Fuel	Pollution Control Device Description <sup>1</sup> (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
Fuel Burning Equipment / Utility Units							
Unit 1	1	The CT is a GE Model PG7241 (FA) simple cycle, dual fuel CT constructed in 2000 and commenced operation on May 31, 2001.	1,761 MMBtu/hr on natural gas (P)	When firing natural gas – dry low NO <sub>x</sub> burners, each unit; and,	CD_LN_01 <sup>1</sup>	Nitrogen Oxides (as NO <sub>2</sub> )	7/31/00 NSR Superseded by 7/6/07 NSR Superseded by 7/01/08 NSR
			1,910 MMBtu/hr on No. 2 distillate fuel oil (S)	When firing No. 2 distillate fuel oil – water injection, each unit.	CD_WI_01 <sup>2</sup>	Nitrogen Oxides (as NO <sub>2</sub> )	
Unit 2	2	The CT is a GE Model PG7241 (FA) simple cycle, dual fuel CT constructed in 2000 and commenced operation on May 23, 2001.	1,761 MMBtu/hr on natural gas each (P)	When firing natural gas – dry low NO <sub>x</sub> burners, each unit; and,	CD_LN_02 <sup>1</sup>	Nitrogen Oxides (as NO <sub>2</sub> )	7/31/00 NSR Superseded by 7/6/07 NSR Superseded by 7/01/08 NSR
			1,910 MMBtu/hr on No. 2 distillate fuel oil (S)	When firing No. 2 distillate fuel oil – water injection, each unit.	CD_WI_02 <sup>2</sup>	Nitrogen Oxides (as NO <sub>2</sub> )	

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>1,4</sup> (P)-Primary Fuel (S) Secondary Fuel	Pollution Control Device Description <sup>1</sup> (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
Fuel Burning Equipment / Utility Units (cont.)							
Unit 3	3	The CT is a GE Model PG7241 (FA) simple cycle, dual fuel CT constructed in 2007 and commenced operation on May 19, 2008.	1,761 MMBtu/hr on natural gas each (P)	When firing natural gas – dry low NO <sub>x</sub> burners, each unit; and,	CD_LN_03 <sup>1</sup>	Nitrogen Oxides (as NO <sub>2</sub> )	7/6/07 NSR Superseded by 7/01/08 NSR
			1,910 MMBtu/hr on No. 2 distillate fuel oil (S)	When firing No. 2 distillate fuel oil – water injection, each unit.	CD_WI_03 <sup>2</sup>	Nitrogen Oxides (as NO <sub>2</sub> )	
Unit 4	4	The CT is a GE Model PG7241 (FA) simple cycle, dual fuel CT constructed in 2007 and commenced operation on June 3, 2008.	1,761 MMBtu/hr on natural gas (P)	When firing natural gas – dry low NO <sub>x</sub> burners, each unit; and ,	CD_LN_04 <sup>1</sup>	Nitrogen Oxides (as NO <sub>2</sub> )	7/6/07 NSR Superseded by 7/01/08 NSR
			1,910 MMBtu/hr on No. 2 distillate fuel oil (S)	When firing No. 2 distillate fuel oil – water injection, each unit.	CD_WI_04 <sup>2</sup>	Nitrogen Oxides (as NO <sub>2</sub> )	

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>1,4</sup> (P)-Primary Fuel (S) Secondary Fuel	Pollution Control Device Description <sup>1</sup> (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
<b>Fuel Burning Equipment / Utility Units (cont.)</b>							
Unit 5	5	The CT is a GE Model PG7241 (FA) simple cycle, dual fuel, CT constructed in 2008 and 2009 and commenced operation on March 5, 2009	1,761 MMBtu/hr on natural gas (P)  1,910 MMBtu/hr on No. 2 distillate fuel oil (S).	When firing natural gas – dry low NO <sub>x</sub> burners;  When firing No. 2 distillate fuel oil – water injection	CD_LN_05 <sup>1</sup>  CD_WI_05 <sup>2</sup>	Nitrogen Oxides (as NO <sub>2</sub> )  Nitrogen Oxides (as NO <sub>2</sub> )	7/01/08 NSR
PH-3	PHS3	Natural gas pipeline heater. Constructed in 2007.	10.75 MMBtu/hr	None	N/A	N/A	7/01/08 NSR
PH-4	PHS4	Natural gas pipeline heater. Constructed in 2008.	4.2 MMBtu/hr	None	N/A	N/A	7/01/08 NSR

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>1,4</sup> (P) Primary Fuel (S) Secondary Fuel	Pollution Control Device Description <sup>1</sup> (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
<b>Miscellaneous Equipment</b>							
T1	N/A	No. 2 distillate fuel oil tank constructed in 2000	2,700,000 gallons	None	N/A	N/A	7/31/00 NSR Superseded by 7/6/07 NSR Superseded by 7/01/08 NSR
T2	N/A	No. 2 distillate fuel oil tank constructed in 2000	2,700,000 gallons	None	N/A	N/A	7/31/00 NSR Superseded by 7/6/07 NSR Superseded by 7/01/08 NSR

1. Specifications included in this section are for informational purposes only and do not form enforceable terms or conditions of the permit unless the specifications are needed to form the basis for one or more of the other terms or conditions in the permit.
2. CD\_LN = dry low NO<sub>x</sub> burner technology
3. CD\_WI = water injection
4. When operating at 100% base load at an ambient temperature of 59°F, 60% relative humidity and a pressure of 14.7 psia

## EMISSIONS INVENTORY

A summary of the 2009 annual emission update is attached. Emissions are summarized in the following tables.

### 2009 Actual Emissions

2009 Criteria Pollutant Emission in Tons/Year					
Emission Unit	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	NO <sub>x</sub>
1	0.682	0.369	2.100	3.011	18.200
2	0.712	0.391	0.800	2.432	12.700
3	0.985	37.539	2.800	3.877	21.600
4	0.691	26.390	1.700	2.653	14.200
5	1.046	40.590	0.900	3.508	17.000
T1	1.820	—	—	—	—
T2	1.820	—	—	—	—
PH-3	0.000	0.000	0.000	0.000	0.000
PH-4	0.000	0.000	0.000	0.000	0.000
Total	7.756	105.279	8.300	15.481	83.700

The CO emissions for Unit 3, Unit 4, and Unit 5 are reported to be much higher than the CO emissions reported for Unit 1 and Unit 2. This is because the emission factors for Unit 1 and Unit 2 are based on stack testing and the emission factors for Units 3, 4, and 5 are from AP-42.

Pollutant	2008 Hazardous Air Pollutant Emission in Tons/Yr
Benzene	0.035
Formaldehyde	1.425
Ammonia	0.000



## EMISSION UNIT APPLICABLE REQUIREMENTS

The regulatory requirements for the Dominion Ladysmith Combustion Turbine Station are embodied in the conditions of the NSR permit dated July 1, 2008, the Title IV permit that will now be January 1, 2010 to December 31, 2014, and the application for the Clean Air Interstate Rule in Section IX of the Title V permit. Compliance Assurance Monitoring (CAM), which is an applicable regulation, is addressed in a separate section below.

## FUEL BURNING EQUIPMENT REQUIREMENTS

### Limitations:

#### **Title V Permit Condition Numbers**

#### **Description**

III.A.1	This condition defines the NO <sub>x</sub> control techniques to be used for CTs (Units 1 – 5) while operating on the two different authorized fuels. Pipeline quality natural gas will be controlled by the use of dry low NO <sub>x</sub> combustors and the No. 2 distillate oil will employ water injection.
III.A.2	This condition defines the NO <sub>x</sub> control technique to be used for the pipeline heaters (PH-3 and PH-4) as good combustion operating practices. The reference to PH1 and PH2 are not included in this Title V permit as these pipeline heaters were replaced with PH-3 and PH-4 as part of the conditions of the July 1, 2008 NSR permit.
III.A.3	This condition defines the SO <sub>2</sub> control techniques to be used for the CT's (Unit 1 – 5) and the pipeline heaters (PH-3 and PH-4) as the use of low sulfur fuels.
III.A.4	This condition defines the PM control techniques to be used for the CT's (Unit 1 – 5) and the pipeline heaters (PH-3 and PH-4) by the use of good combustion operating practices.
III.A.5	This condition defines the VOC and CO control techniques to be used for the CT's (Unit 1 – 5) and the pipeline heaters (PH-3 and PH-4) by the use of good combustion operating practices.
III.A.6, III.A.7, III.A.8, III.A.9, III.A.10, & III.A.11	These conditions provide specification for the approved fuels for Unit 1 through Unit 5 and PH-3 and PH-4.
III.A.12	This condition defines the allowed fuels to be stored in T1 and T2.

- III.A.13            This condition requires that Unit 1 and Unit 2 operate in compliance with this permit unless the requirements of 40 CFR 60, Subpart GG, is more restrictive.
- III.A.14            This condition requires that Unit 3, Unit 4, and Unit 5 operate in compliance with this permit unless the requirements of 40 CFR 60, Subpart KKKK are more restrictive.
- III.A.15            This condition requires that pipeline heater, PH-3, operate in compliance with this permit unless the requirements of 40 CFR 60 Subpart Dc are more restrictive.
- III.A.16            This condition defines and allows an alternate operating scenario for the re-tuning of Unit 1 – Unit 5 and describes the specific operating requirements for this action.
- III.A.17            This condition defines and allows an alternate operating scenario for the fuel type transfers and describes the specific operation requirements for this action. The short-term emissions for distillate fuel oil shall be applied during fuel switching operations; and any emissions above these limits are considered excess emissions.
- III.A.18            This condition sets short-term emission limits for PM<sub>10</sub>, NO<sub>x</sub>, and CO for Unit 1 and Unit 2, when firing on natural gas, except during start-up, shutdown, and re-tuning. The emission rates are based on manufacturer's data provided with the Title V application.
- III.A.19            This condition sets short-term emission limits for PM<sub>10</sub>, NO<sub>x</sub>, SO<sub>2</sub>, and CO for Unit 3, Unit 4, and Unit 5, when firing on natural gas, except during start-up, shutdown, and re-tuning. The emission rates are based on manufacturer's data provided with the Title V application.
- III.A.20            This condition sets short-term emission limits for PM<sub>10</sub>, NO<sub>x</sub>, and CO for Unit 1 and Unit 2, when firing on No. 2 distillate fuel oil, except during start-up, shutdown, and re-tuning. The emission rates are based on manufacturer's data provided with the Title V application.
- III.A.21            This condition sets short-term emission limits for PM<sub>10</sub>, NO<sub>x</sub>, SO<sub>2</sub>, and CO for Unit 3, Unit 4, and Unit 5, when firing on No. 2 distillate fuel oil, except during start-up, shutdown, and re-tuning. The emission rates are based on manufacturer's data provided with the Title V application.
- III.A.22            This condition defines the period to be considered start-up and shutdown.
- III.A.23            This condition defines excess emissions during a malfunction.

Allows NO<sub>x</sub> emissions concentrations for Unit 1 and Unit 2 that do not exceed the standards of 40 CFR, 60.332 (Subpart GG) and Unit 3, Unit 4, and Unit 5 that do not exceed the standards from 40 CFR 60, Subpart KKKK, Table I during a malfunction.

Notification and reporting requirements are also included within this condition for all Units 1 – 5.

- III.A.24 This condition sets the combined annual emission limits for the CT's only and the combined annual emissions for the facility. The method of determining the annual emissions are also included in this condition.
- III.A.25 This condition stipulates the visible emission limits for the CT's (Unit 1 through Unit 5)
- III.A.26 The permittee requested and was granted an exemption to the fuel bound nitrogen monitor and therefore the short-term NO<sub>x</sub> emission rate during this operating condition is 42 ppm @ 15%. Should the permittee decide in the future that they want to adjust the NO<sub>x</sub> emission limit to including the fuel-bound nitrogen, this condition sets out the procedures for making that determination.

## **Monitoring**

### **40 CFR 64, Compliance Assurance Monitoring (CAM) -**

Units subject to the Acid Rain Program or units subject to emission limitations or standards that apply under an emissions trading program are exempt from the requirements of 40 CFR Part 64, Compliance Assurance Monitoring (CAM). Dominion Ladysmith Combustion Turbine Station is subject to the Acid Rain Program and CAIR. In addition, Dominion Ladysmith Combustion Turbine Station employs a NO<sub>x</sub> CEMS to ensure that the facility remains a minor source under PSD.

The compliance strategy for the facility entails continuous monitoring of NO<sub>x</sub>, proper operation and maintenance of the equipment, the use of low sulfur fuels, and good combustion practices.

For the combustion turbines, a continuous emissions monitoring system (CEMS) is used to monitor NO<sub>x</sub> and O<sub>2</sub> from all CT's, Unit 1 – Unit 5. The CEMS were installed to demonstrate compliance with emission standards of NSPS Subpart GG, Subpart KKKK, and BACT. Records of fuel type, fuel throughput, NO<sub>x</sub> CEMS data, and maintenance records, will provide assurance that the emission limits are not exceeded or identify any periods in which there may be an excursion.

The NO<sub>x</sub> and O<sub>2</sub> monitors on each CT, Unit 1 – Unit 5, are used in lieu of monitoring the ratio of water to fuel, in accordance with 40 CFR 60, Subpart GG and 40 CFR 60, Subpart KKKK.

The primary fuel for the CTs is pipeline natural gas, with low sulfur No.2 distillate fuel oil to be used as a backup. The only fuel allowed for the pipeline heaters, PH-3 and PH-4 is pipeline quality natural gas. As long as the CTs and pipeline heaters are properly maintained and operated, PM<sub>10</sub> emission limits, as well as opacity limits should not be violated. The permit conditions requiring proper operation and maintenance of the equipment, and records of maintenance and training, provide a reasonable assurance of compliance with the PM<sub>10</sub> and opacity standards.

- III.B.1                      This condition requires a NO<sub>x</sub>CEMS and O<sub>2</sub> monitor on all CT's, Unit 1 – Unit 5, and specifies minimum requirements for quality assurance of the data. The CT's are affected units under the Acid Rain Program and must meet the requirements of Part 75. NO<sub>x</sub> CEMS that meet the requirements of Part 75 may use the CEMS to meet the requirements of Subpart GG and Subpart KKKK.

The condition also allows the DEQ to require a performance test of the CEM's at any time.

Quality assurance requirements are stipulated to meet the requirements of 40 CFR Part 75, Appendix B.

- III.B.2                      This condition allows the flexibility of the Board to determine how the facility will demonstrate compliance with the NO<sub>x</sub> emission limits. This determination may include the use of the CEMS as the compliance method. Per the NSPS, monitoring flexibility appears to be allowed for a facility using steam or water injection to control NO<sub>x</sub> emissions through either parametric monitoring, or a continuous emissions monitoring system (CEMS). For this facility, the Board has approved a NO<sub>x</sub> CEMS, which must also meet permit specific data capture and QA/QC requirements. Flexibility is allowed by the NSPS, but a change must be approved by the Board.

- III.B.3                      Requires a NO<sub>x</sub> minimum data capture of 90% on a twelve month rolling basis of each CT's operating hours. The method for determining this rolling average is also set in this condition.

- III.B.4                      This condition specifies data alternatives in the event of a NO<sub>x</sub>CEMS failure. Although Subpart GG and Subpart KKKK allow missing data to be recorded as monitor down time with no data substitution, DEQ requires missing data substitution to ensure that the annual emissions do not trigger PSD.

- III.B.5                      This condition requires the installation of fuel consumption

instrumentation or a DEQ approved backup method for indicating/determining hourly fuel consumption in scf/hour and gallons/hour of each CT while operating.

- III.B.6 This condition describes the requirements to demonstrate continued compliance with the natural gas sulfur content for Unit 1 through Unit 5, and PH-3 and PH-4.
- III.B.7 This condition describes the requirements to demonstrate continued compliance with the No. 2 distillate fuel oil sulfur content for Units 1 through Unit 5.
- III.B.8 This condition requires the permittee obtain a No. 2 fuel oil certification with each shipment and sets the information which must be included in that certification.

#### **Maintenance/Operating Procedures**

- III.C.1 This condition requires the permittee to operate the facility and associated air pollution equipment using good air pollution control practices for minimizing emissions.
- III.C.2 This condition lists the minimal measures to be taken in order to minimize the duration and frequency of excess emissions.

#### **On-Site Records**

- III.D.1 This condition itemizes the types of records which must be maintained on site, and the availability.
- III.D.2 This condition stipulates the length of time that the records must be maintained.

#### **Testing**

- III.E.1 There is no source testing required by this permit, however, DEQ and EPA has the authority to request testing necessary to demonstrate compliance with an emission limit or standard.
- III.E.2 This condition requires the facility to conduct testing necessary to demonstrate compliance with the emission limits contained in this permit.
- III.E.3 This condition lists the test methods to be used in determining compliance, if required.

## **Reporting**

This section provides the address for submitting written reports to both DEQ and EPA.

- III.F.1                      This condition requires the reporting of equipment and control equipment malfunctions and the details to be included in the notification of the malfunction.
- III.F.2                      The condition requires the reporting of control equipment scheduled maintenance and the details of the maintenance outage.
- III.F.3                      This condition requires that when an alternate operating scenario for re-tuning event is scheduled, a notification must be submitted no less than 24-hours prior to the scheduled re-tuning. Also within the condition is the minimum information which must be included in that notification.

A follow-up report is required no later than fourteen days following the re-tuning event and shall include, at a minimum, the information stipulated within the condition.

## **FACILITY WIDE CONDITIONS**

### **Certification of Documents**

- IV.A.1                      This condition describes the criteria for designation as the responsible official. This condition also specifies that the following documents submitted to the board shall be signed by a responsible official: (i) any emission statement, application, form, report, or compliance certification; (ii) any document required to be signed by any provision of the regulations of the board; or (iii) any other document containing emissions data or compliance information the owner wishes the board to consider in the administration of its air quality programs. This condition comes from the General Conditions of the NSR permit dated 07/01/2008; however, the General conditions of the Title V permit do not include these clarifications and therefore it is incorporated in the Title V permit in this facility wide section.

### **Maintenance/Operating Procedures**

- IV.B                        This condition describes the requirements in which the permittee must operate the facility and control equipment. This condition comes from the General Conditions of the NSR permit dated 07/01/2008; however, the General conditions of the Title V permit do not include these clarifications and therefore it is incorporated in the Title V permit in this facility wide section.

### **Violation of Ambient Air Quality Standard**

- IV.C                      This condition requires the facility to limit operation or shut down during conditions in which continued operation at the current level could cause a violation of the ambient air quality standards. The facility must not resume normal operation until the threat is over. This condition comes from the General Conditions of the NSR permit dated 07/01/2008; however, the General conditions of the Title V permit do not include these clarifications and therefore it is incorporated in the Title V permit in this facility wide section.

### **Recordkeeping -**

- IV.D.1                    This condition sets the requirements to maintain all records necessary to demonstrate compliance with the Title V permit. These records should include, but are not limited to all data and calculations to demonstrate compliance with annual emission limits and records of any scheduled and unscheduled maintenance, and operator training.
- IV.D.2                    This condition sets the retention time for this information and availability for review at five years from the date of the data.

### **Testing**

Required testing for Unit 1 – Unit 5 was completed within the required timeframe of each of the NSR permits issued for the construction of the units. Therefore, there are no applicable compliance determinations testing required in this Title V permit.

- IV.E.1                    These conditions confirms that there are no compliance testing requirements and also stipulates that DEQ and EPA have the authority to require testing at any time for the purpose of demonstrating compliance with the emission limits in this Title V permit.
- IV.E.2                    This condition requires that the permittee modify the facility, as necessary and at any time, to allow for emission testing.
- IV.E.3                    This condition supplies a table of test methods if additional testing is performed.

### **Streamlined Requirements**

The following conditions in the NSR permit dated July 1, 2008 have not been included in the

Title V permit for the following reasons:

Condition 18 – Unit 1 and Unit 2 have the following applicable requirements established in NSPS Subpart GG, which is included in 9 VAC 5-50-410 by reference:

40 CFR 60.332(a)(2): Standard for Nitrogen Oxides  
where:

STD = Allowable NO<sub>x</sub> emissions (percent by volume at 15 percent oxygen and on a dry basis).

Y = Manufacturer's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO<sub>x</sub> emission allowance for fuel-bound nitrogen as defined in 60.332 (a)(3)

The allowable NO<sub>x</sub> emission limits for each of the turbines contained in the minor NSR permit are more stringent than the limits established by NSPS Subpart GG. Therefore, only the limits from minor NSR permit have been included in the Title V permit. However, due to the difference in averaging periods and the treatment of startup and shutdowns periods, compliance with the limit under NSPS Subpart GG must be reported and documented apart from compliance with the BACT limits contained in the minor NSR permit.

Condition 19 – Unit 3, Unit 4, and Unit 5 have the following applicable requirements established in NSPS Subpart KKKK, which is included in 9 VAC 5-50-410 by reference:

40 CFR 60, Subpart KKKK Table 1: Natural Gas Standard for NO<sub>x</sub> – 15 ppm @ 15% O<sub>2</sub>

The allowable NO<sub>x</sub> emission limits for each of the turbines contained in the minor NSR permit are more stringent than the limits established by NSPS Subpart KKKK. Therefore, only the limits from minor NSR permit have been included in the Title V permit. However, due to the difference in averaging periods and the treatment of startup and shutdowns periods, compliance with the limit under NSPS Subpart KKKK must be reported and documented apart from compliance with the BACT limits contained in the minor NSR permit.

Condition 32 – The portion of this condition dealing with the monitor of the fuel-bound nitrogen content of the No. 2 distillate oil for Unit 1 and Unit 2 was not



included in the Title V permit because the permittee requested and was granted an exemption from the requirement as a part of the custom fuel sampling schedule.

Condition 39 – This condition has not been included. This condition is included in the General Conditions of the Title V permit and therefore is not repeated.

Condition 40 – This condition has not been included. This condition is included in the General Conditions of the Title V permit and therefore is not repeated.

Condition 46 – This condition has not been included. . This condition is included in the General Conditions of the Title V permit and therefore is not repeated.

Condition 47 – This condition has not been included. . This condition is included in the General Conditions of the Title V permit and therefore is not repeated.

**Requirements from old permits that have been fulfilled and are not included**

Condition 20 – This condition has not been included. The initial performance testing to demonstrate compliance with the NO<sub>x</sub> and CO short-term emission limits for Unit 3, Unit 4, and Unit 5 in the NSR permit dated July 1, 2008 have been completed and therefore this condition is no longer applicable.

Condition 21 - This condition has not been included. The initial performance testing to demonstrate compliance with the SO<sub>2</sub> short-term emission limits for Unit 3, Unit 4, and Unit 5 in the NSR permit dated July 1, 2008 have been completed and therefore this condition is no longer applicable.

Condition 22 – This condition has not been included. The initial performance testing to demonstrate compliance with the visible emission limits concurrent with the performance testing for Unit 3, Unit 4, and Unit 5 in the NSR permit dated July 1, 2008 have been completed and therefore this condition is no longer applicable.

Condition 24 – This condition has not been included. The CEMS have been installed and the initial performance evaluation has been completed and therefore this condition is no longer applicable.

Condition 34 – This condition has not been included. All initial notifications have been completed and therefore this condition is no longer applicable.

Condition 38 – This condition has not been included. Since the Units have all been constructed this condition is no longer applicable.

**GENERAL CONDITIONS**

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions. Following are comments to the General Conditions.

**VII.B Permit Expiration**

This condition refers to the State Air Pollution Control Board (Board) taking action on a permit application. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.2-604 and §10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement No. 2-2003".

This general condition cites the Articles that follow:

Article 3 (9 VAC 5-80-360 et seq.), Part II of 9 VAC 5 Chapter 80, Acid Rain Operating Permits for Stationary Sources

This general condition cites the sections that follow:

9 VAC 5-80-430. Application

9 VAC 5-80-500. Permit Shield

9 VAC 5-80-510. Action on Permit Applications

**VII.F Failure/Malfunction Reporting**

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

Note: The choices below are based on continuous monitors meeting New Source Review requirements or existing source requirements listed in 9 VAC 5-40-41.

In order for emission units to be relieved from the requirement to make a written report in 14 days the emission units must have continuous monitors meeting the requirements of 9 VAC 5-50-410 or 9 VAC 5-40-41.

This general condition cites the sections that follow:

- 9 VAC 5-40-41. Emissions Monitoring Procedures for Existing Sources
- 9 VAC 5-40-50. Notification, Records and Reporting
- 9 VAC 5-50-50. Notification, Records and Reporting

This general condition contains a citation from the Code of Federal Regulations as follows:

40 CFR 60.13 (h). Monitoring Requirements.

#### VII.J Permit Modification

This general condition cites the sections that follow:

- 9 VAC 5-80-360. Applicability, Acid Rain Operating Permit For Stationary Sources
- 9 VAC 5-80-550 Changes to Permits
- 9 VAC 5-80-660 Enforcement
- 9 VAC 5-80-1100 Applicability, Permits for New and Modified Stationary Sources
- 9 VAC 5-80-1605 Applicability, Permits for Major Sources and Modifications – PSD Areas
- 9 VAC 5-80-2000 Applicability, Permits for Major Stationary Sources and Major Modifications Locating in Nonattainment Areas

#### VII.U Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-20-180 and 9 VAC 5-80-490. The malfunction requirements of this permit are listed in General Condition F and General Condition U. For further explanation see the comments on general condition F.

This general condition cites the sections that follow:

- 9 VAC 5-20-180 Facility and Control Equipment Maintenance or Malfunction
- 9 VAC 5-80-490 Permit Content

#### VII.Y Asbestos Requirements

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

This general condition contains citations from the Code of Federal Regulations that follow:

- 40 CFR 61.145 NESHAP Subpart M. National Emissions Standards for

40 CFR 61.148	Asbestos as it applies to demolition and renovation. NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to insulating materials.
40 CFR 61.150	NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to waste disposal.]

This general condition cites the regulatory sections that follow:

9 VAC 5-60-70 Designated Emissions Standards  
9 VAC 5-80-490 Permit Content

#### **STATE ONLY APPLICABLE REQUIREMENTS**

None identified by the applicant.

#### **FUTURE APPLICABLE REQUIREMENTS**

40 CFR 98 – Greenhouse Gas Reporting Requirements

#### **INAPPLICABLE REQUIREMENTS**

40 CFR 60, Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels is no longer applicable to storage vessels that store liquids with a vapor pressure less than 3.5 kilopascals (0.5 psia). Storage tanks T1 and T2 are permitted for storage of No. 2 distillate fuel oil only which has vapor pressure less than 0.5 psia

40 CFR 60, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units is not applicable to the one of the two natural gas pipeline heaters (PH-4) because the heater is less than 10 MMBtu/hr.

40 CFR 63, Subpart YYYY – National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines applies to stationary combustion turbines located at major sources of HAP emissions. Dominion Ladysmith Combustion Turbine Station is not a major source of HAP.

#### **INSIGNIFICANT EMISSION UNITS**

The facility identified two insignificant emission units which are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-490.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation	Pollutant Emitted (5-80-720 B.)	Rated Capacity (9 VAC 5-80-720 C.)
TNK1	No.2 distillate fuel oil storage tank	9 VAC 5-80-720 B	VOC	2,700,000 gallons
TNK2	No.2 distillate fuel oil storage tank	9 VAC 5-80-720 B	VOC	2,700,000 gallons

#### **CONFIDENTIAL INFORMATION**

The permittee did not submit a request for confidentiality. All portions of the permit application are suitable for public review.

#### **PUBLIC PARTICIPATION**

A public notice was published in the Fredericksburg Free Lance Star on July 26, 2010 announcing a thirty-day public comment period for this permit. The public comment period will end on August 27, 2010.